

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
6 May 2005 (06.05.2005)

PCT

(10) International Publication Number
WO 2005/040060 A2

- (51) International Patent Classification⁷: **C04B 28/04**, 28/18
- (21) International Application Number: **PCT/EP2004/012189**
- (22) International Filing Date: 26 October 2004 (26.10.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0324967.9 27 October 2003 (27.10.2003) GB
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **HIGH TEMPERATURE CEMENTS**

(57) Abstract: A method of designing a cement composition comprises determination of the temperature to which the composition will be exposed in situ; determination of a stable, thermodynamic equilibrium composition of a $\text{CaO-Al}_2\text{O}_3\text{-SiO}_2\text{-H}_2\text{O}$ (CASH) mineral system in the [xonotlite/wollastonite]-grossulaire-anorthite or grossulaire-anorthite-quartz triangles of the Si-Ca-Al phase diagram with a possible contribution of iron and/or magnesium, analogous to the cement when set, at the determined temperature; determining proportions of cement and mineral oxides required to provide a mixture having the determined composition; and defining a series of particulate materials of predetermined particle sizes and densities, comprising cement and mineral oxides in the determined proportions.

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